

Two new African species of *Encyrtus* Latreille (Hymenoptera: Encyrtidae) parasitic in wax scales (Hemiptera: Coccidae)

by

G. L. PRINSLOO

National Collection of Insects, Plant Protection Research Institute, Pretoria, 0001

Encyrtus aquilus spec. nov. and *E. melas* spec. nov. are described and illustrated from both sexes. They were reared from species of *Gascardia* collected in the Cape Province, South Africa.

Six valid species of *Encyrtus* Latreille have been described from Subsaharan Africa (Annecke & Insley 1971; Prinsloo & Annecke 1978). Two further species are described below; but because several other apparently undescribed species are represented in my collection, I refrain from providing a key to the African species of *Encyrtus* at this stage. The two new species are not particularly closely related to any of their described African relatives, or to any other species of the genus known to me, and they are distinguished by a combination of structure and colour. *Encyrtus melas* spec. nov. and *E. aquilus* spec. nov. are most readily separated from their African congeners in both sexes by their uniformly black colour. The two species, which were both reared from species of *Gascardia*, are differentiated from each other as indicated below.

***Encyrtus aquilus* spec. nov., Figs 1-7**

FEMALE. Length: about 2,75 mm. Colour: head and body entirely black, except the mesopleura, which have slightly paler suffusions in parts; thoracic setation appearing mostly silvery in plays of light, save the scutellar tuft, which is black; mandibles dark brown, the palpi black; antenna with radicle and scape yellowish-brown, the remainder of antenna brownish-black to black, the pedicel and basal one or two funicle segments paler on their lateral and ventral sides; legs brownish-black to black, except the basal four segments of middle tarsus, which are brown, and the basal four segments of the hind tibia, which are brilliant white, the first segment not entirely so, its base marked with black; maculation of basal part of fore wing as in Fig. 1, the remainder of the wing disc fairly strongly and somewhat unevenly infuscated to apical margin; hind wing hyaline.

Head in dorsal view (occiput perpendicular) with anterior margin convex laterally, gently concave medially, the upper end of the interscrobal prominence just visible in this position; head about twice as wide as frontovertex at median ocellus; ocelli small, the lateral pair about their own diameter from the eye margins, and a little less than their own diameter from the occipital margin; head in frontal view with fronto-facial carina as shown in Fig. 3; head in this view about 1,1 times as broad as long; toruli

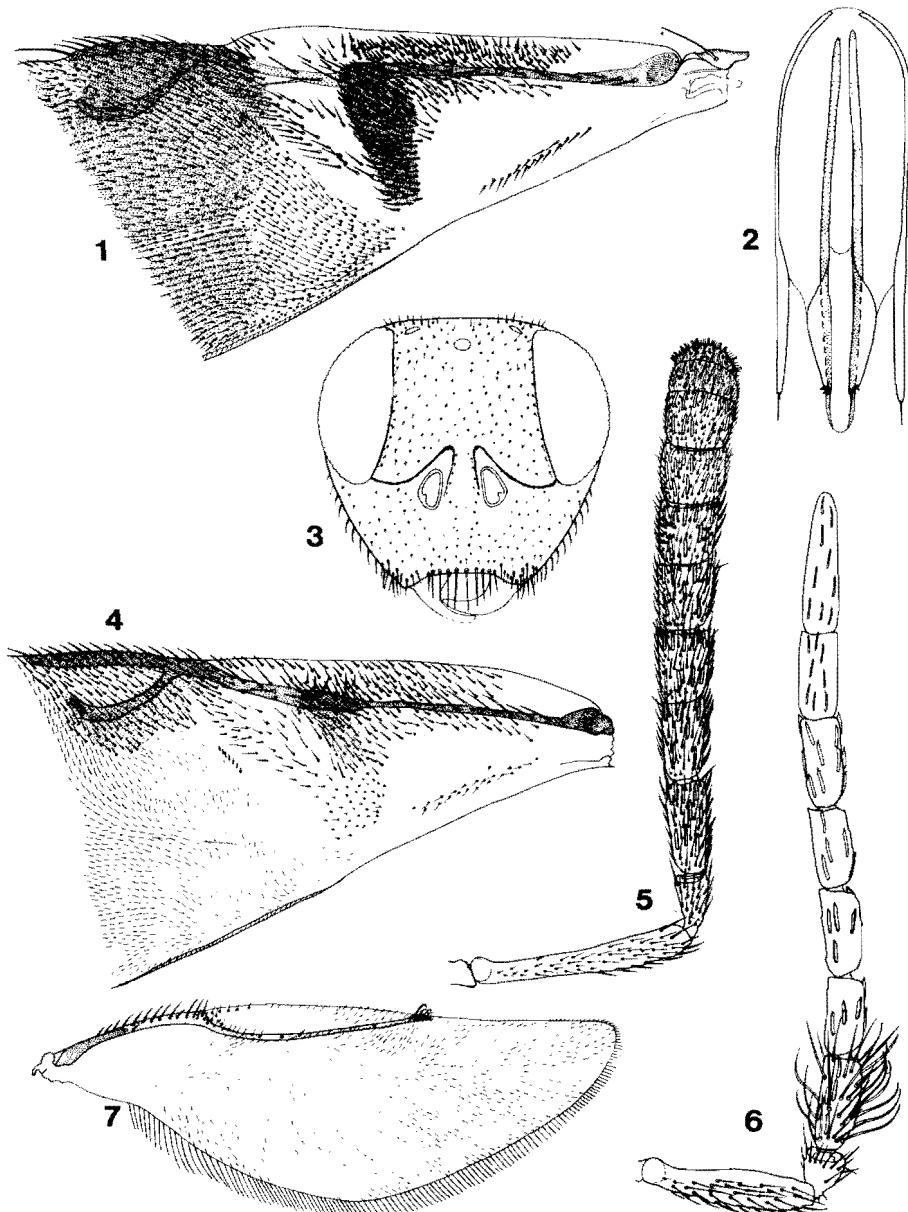
with lower margins clearly below the level of lower eye margins, about their own diameter apart at their smallest interval, about 1.5 times this diameter from the mouth margin. Antenna moderately compressed laterally; scape about 6.25–6.5 times as long as its greatest width; funicle segments I–IV each longer than broad, the basal segment long, slender, about 1.5 times the length of pedicel; funicle segment V quadrate or a little wider than long, VI wider than long; club not quite as long as the distal two funicle segments together; antenna otherwise as in Fig. 5. Mandible typical of the genus; maxillary palpi four-segmented, the labial three-segmented. Frontovertex from occipital margin to fronto-facial carina densely, evenly, and distinctly punctate, the punctations relatively large, their diameter about one-half that of median ocellus; each punctation giving rise to a fine seta, the setae difficult to see under low magnification; remainder of head (below fronto-facial carina) without punctations, the sculpture fairly coarsely reticulate; genae with beard sparse and short compared with some other species of *Encyrtus*, as in Fig. 3.

Thorax with mesoscutum more than 1.5 times as broad as long; mesoscutum mostly with fine cellulate-reticulate sculpture except laterally, where the integument becomes longitudinally strigose; mesoscutum entirely densely and evenly setose, the setae strong, straight, recumbent; scutellum about as wide as long, the anterior one-third or so (areas adjacent to axillae) with coarse cellulate-reticulate sculpture; this area of the disc densely covered with fine silvery recumbent setae, lending a downy appearance to the integument; apical two-thirds or so of the disc mostly with coarse longitudinally strigose sculpture; this area with strong darkly coloured setae and a well-developed semi-erect tuft of bristles separated into two bundles; integument of propodeum largely smooth and polished. Middle leg with tibial spur about as long as basal tarsal segment, the latter subequal in length to the following three tarsal segments together. Fore wing about 2.5 times as long as broad, the basal part of the disc, venation and setation, as shown in Fig. 1; remainder of wing disc evenly and densely setose to apex; hind wing as in Fig. 7.

Abdomen approximately as long as thorax; ovipositor, as seen through the derm in cleared slide-mounted specimens, not quite half the length of gaster, a little more or less than one-half as long as middle tibia.

MALE. Colour: much as in the female except the antennal flagellum, which is paler, and the fore wing, which is hyaline save a small infuscated area along the lower margin of the stigmal vein and an infuscated patch below the middle of submarginal vein, as shown in Fig. 4.

Differing structurally from the female chiefly as follows: head in dorsal view about 1.6 times as wide as frontovertex at median ocellus; lateral ocelli almost twice their own diameter from the eye margins; head in frontal view about 1.3 times as wide as long; fronto-facial ridge absent; toruli with lower limits slightly above the level of lower eye margins, not quite their greatest diameter apart at their smallest interval, about twice this diameter from the mouth margin; punctations on frontovertex appearing a little shallower than in female. Antenna as in Fig. 6, the scape five times as long as broad; funicle with all segments plainly longer than broad, the basal segment almost three times as long as the pedicel; club somewhat shorter than the distal two funicle segments together. Sculpture of mesoscutum coarser, much the same coarseness as on scutellum. Basal part of fore wing with venation and setation as in Fig. 4. Male genitalia as in Fig. 2, the volsellae each with three hooklets.



Figs 1-7. *Encyrtus aquilus* spec. nov., paratypes. 1. Basal part of fore wing (♀ T 3291-1). 2. Genitalia (♂ T 3291-2). 3. Head, frontal view (♀ T 3291-1). 4. Basal part of fore wing (♂ T 3291-2). 5. Antenna (♀ T 3291-1). 6. Antenna (♂ T 3291-2). 7. Hind wing (♀ T 3291-1).

MATERIAL EXAMINED. ♀ Holotype, 9 ♀ 3♂ paratypes with the following data: SOUTH AFRICA: Villiersdorp, C.P., x.1969, H. P. Insley, ex *Gascardia destructor* (Newstead) on *Lachnaea penicillata* Meisn. (♀ holotype, 1 ♀ 2♂, T 3191); same data except: ex *Gascardia* sp. on *Anthospermum* sp. (8 ♀ 1♂, T 3291). Holotype and paratypes in National Collection of Insects, Pretoria; 1 ♀ paratype in British Museum (Natural History), London.

REMARKS. *Encyrtus aquilus* closely resembles *E. melas* spec. nov. in colour and structure. The females of these two species differ only in the dimensions of the antennal segments slightly, in the shape of the fronto-facial carina, and in the position of the toruli: in *E. aquilus* the lower limits of the toruli are below the lower eye margins; in *E. melas* they are placed at the same level as the lower eye margins. The males differ from each other chiefly in that the fore wing of *E. aquilus* is largely hyaline (Fig. 4), whereas in *E. melas* it is distinctly infuscated in parts (Fig. 9).

Encyrtus melas spec. nov., Figs 8-12

This new species is closely allied to *E. aquilus* and is here described with reference to the latter.

FEMALE. Length: about 2,25 mm. Colour: similar to that of *E. aquilus*, the maculae of the basal part of the fore wing as in Fig. 8.

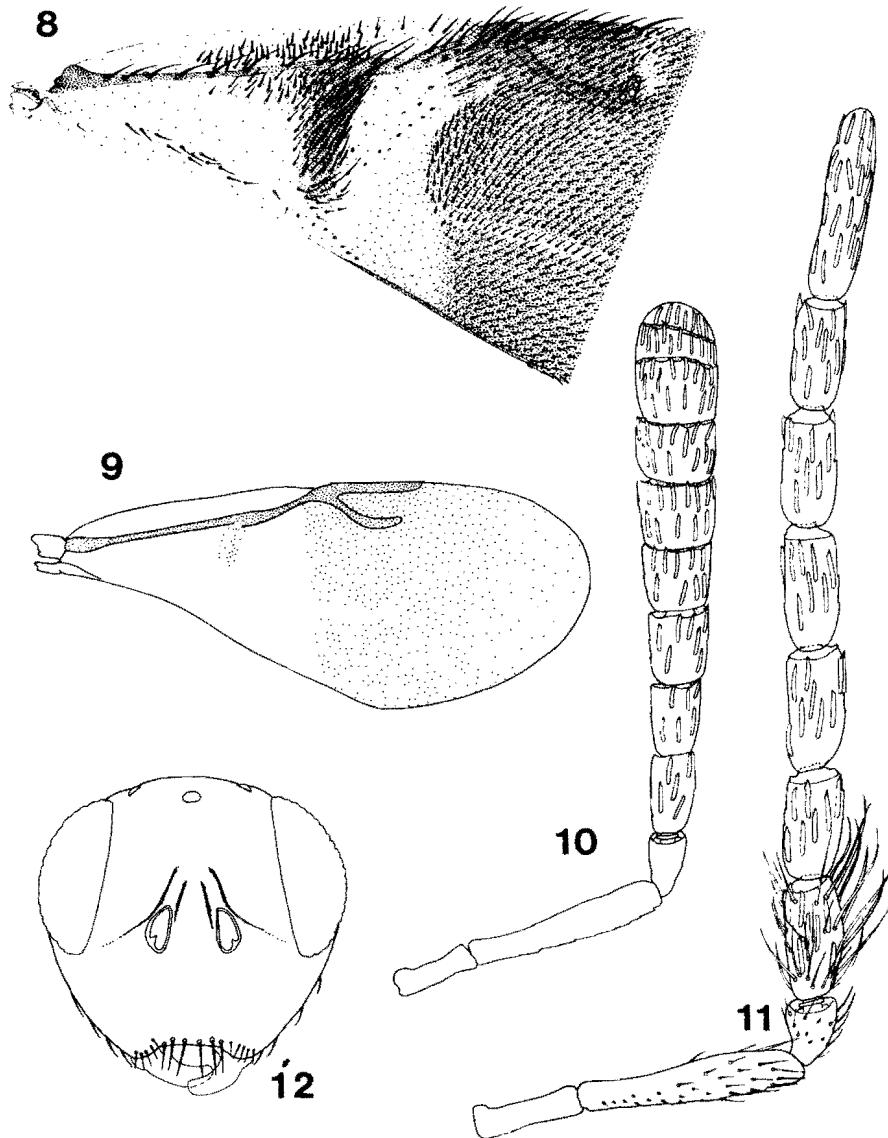
Head and appendages structurally as in *E. aquilus*, except as follows: lateral ocelli a little more than their own diameter from the eye margins; fronto-facial carina not as well developed, as shown in Fig. 12; toruli with lower limits level with lower eye margins, about twice their greatest diameter from the mouth margin; antenna (Fig. 10) with basal funicle segment ranging from 1,2 to 1,5 times as long as pedicel; funicle segments I-III each longer than wide, IV quadrate, V-VI each wider than long, otherwise as in *aquilus*.

Thorax, abdomen, wings and legs not significantly different from those of *E. aquilus*; in the six slide-mounted specimens, the ovipositor is either more or less than half the length of the middle tibia.

MALE. Differing in colour from the male of *E. aquilus* in that the fore wing is distinctly infuscated as in Fig. 9. Structurally much the same as in the latter species, differing slightly in the dimensions of the antenna (Fig. 11) and in the toruli, which are placed higher on the face, 2,25 times their greatest diameter from the mouth margin.

MATERIAL EXAMINED. All the specimens recorded below were reared from either *Gascardia* or *Tachardina* (Lacciferidae) on *Elytropappus rhinocerotis* Less. The genus *Encyrtus* is not known to attack lacciferids, and the alleged records of *Tachardina* are probably erroneous. It is likely that mixed populations of *Tachardina* and *Gascardia tachardiaformis* (which resemble each other superficially) were present in these samples, and that *E. melas* actually emerged from the latter host.

♀ Holotype, 25 ♀ 2♂ paratypes with the following data: SOUTH AFRICA: Moorreesburg, C.P., x.1969, H. P. Insley ex *Gascardia* sp. (♀ holotype, 17 ♀ 1♂, T 3192); same data except: Riversonderend (5 ♀ 1♂, T 3232); Ceres, C.P., x.1971, H. P. Insley, 'ex *Tachardina* sp.' (4 ♀, T 4007). The following specimens have not been included in the types: Middleburg (Renosterberg), C.P., xii.1960, H. D. Brown, ex *Gas-*



Figs 8-12. *Encyrtus melas* spec. nov., paratypes. 8. Basal part of fore wing (♀ T 3192-1). 9. Fore wing, showing maculation (♂ T 3192-2). 10. Antenna (♀ T 3192-1). 11. Antenna (♂ T 3192-2). 12. Head, frontal view (♀ T 3192-1).

cardia tachardiaformis (Brain) (1 ♀, no accession number); same data except: Vanwyksdorp, 'ex *Tachardina minor* (Brain)' (1 ♀, T 3264). All above-mentioned hosts collected on *Elytropappus rhinocerotis* Less. Holotype and paratypes in National Collection of Insects, Pretoria; 1 ♀ paratype in British Museum (Natural History), London.

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